

Listing of Claims/Amendments to the Claims.

The list of claims that follows will replace all prior versions in the application.

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Currently Amended) A multi-dimensional programming device, according to claim 3, wherein comprising: an object file unit storing object information for creating a multi-dimensional horizontally written flowchart, an object editing unit for using object information read from said object file unit to edit said multi-dimensional flowchart, a drafting unit for drafting said edited multi-dimensional flowchart, and a saving unit for saving said edited multi-dimensional flowchart in said object file unit, said object information including program flowchart symbol information, coordinate information, cell information and character information, said coordinate information comprises including a combination of at least one of (i) a combination of a time axis, a data axis and a control axis, (ii) a combination of the time axis, the data axis, the control axis and a CPU axis, (iii) a combination of the time axis, the data axis, the control axis, the CPU axis and an event axis; (iv) a combination of the time axis, the data axis, the control axis, the CPU axis, the event axis and a condition axis; and (v) a combination of the time axis, the data axis, the control axis, the CPU axis, the event axis, the condition axis and a PC axis.

5. (Currently Amended) AThe multi-dimensional programming device according to claim 4, wherein a screen is drafted with the time axis, the data axis, the control axis, the CPU axis, the event axis, the condition axis and the PC axis as its coordinate information, and asaid screen is constructed and arranged such that a horizontal axis becomesis

used for the time axis and a vertical axis is used for the data axis, the control axis, the CPU axis, the event axis, the condition axis and the PC axis.

6. (Currently Amended) ~~A~~The multi-dimensional programming device according to claim ~~14~~, wherein said object editing unit ~~(i) makes the programming space~~ displayable on ~~the~~a screen by means of three-dimensional basic coordinates which ~~take the~~use a horizontal axis ~~as~~for the time axis and ~~use the~~a vertical axis for at least the data axis and the control axis, and ~~(ii) performs the editing of said screen and the like according to an input~~ command signal.

7. (Currently Amended) ~~A~~The multi-dimensional programming device according to claim 6, wherein said object editing unit ~~makes it possible to~~enables dimensional ~~switching a dimension in order to take a cross section for of the~~said programming space ~~and see~~ to reveal an inside portion of a program.

8. (Currently Amended) ~~A~~The multi-dimensional programming device according to claim 4, wherein said object editing unit is constructed and arranged to makes flat surfaces of draftable programming spaces into a group and to assign tabs to ~~the~~said flat surfaces; in a ~~case of a~~ screen construction in which the vertical axis represents the data axis, the control axis, the CPU axis, the event axis, the condition axis and the PC axis.

9. (Currently Amended) ~~A~~The multi-dimensional programming device according to claim ~~34~~, wherein said object editing unit ~~is provided with~~includes a function for at least one of shrinking or ~~and~~ restoring ~~the~~said coordinate information by units of rows and columns.

10. (Currently Amended) ~~A~~The multi-dimensional programming device according to claim ~~3~~4, wherein said object editing unit ~~is provided with~~includes a function for burying a given coordinates axis into another coordinates axis, ~~such as by decreasing the number of dimensions,~~ centered around the time axis ~~which is common throughout the~~a programming space.

11. (Currently Amended) ~~A~~The multi-dimensional programming device according to claim ~~1~~4, wherein said saving unit contains information associated with a horizontal slit ~~information having one line's worth of cell objects,~~ and information associated with a flat surface object ~~information having an object on a flat surface corresponding to the~~said horizontal slit.

12. (New) The multi-dimensional programming device according to claim 4, wherein said multi-dimensional horizontally written flowchart is at least one of a two-dimensional flowchart, a three-dimensional flowchart and a four-dimensional flowchart.

13. (New) The multi-dimensional programming device according to claim 4, wherein said program flowchart symbol information includes a start terminator and an end terminator.

14. (New) A multi-dimensional programming method, comprising the steps of: storing object information for creating a multi-dimensional horizontally written flowchart in an object file unit, reading object information from said object file unit, using said object information, editing said multi-dimensional flowchart, drafting said edited multi-dimensional horizontally written flowchart using a drafting unit, and, using a saving unit, saving said edited multi-dimensional flowchart into said object file unit, said object information including program flowchart symbol information, coordinate information, cell information and character

information, said coordinate information including a combination of at least one of (i) a time axis, a data axis and a control axis, (ii) the time axis, the data axis, the control axis and a CPU axis, (iii) the time axis, the data axis, the control axis, the CPU axis and an event axis, (iv) the time axis, the data axis, the control axis, the CPU axis, the event axis and a condition axis, and (v) the time axis, the data axis, the control axis, the CPU axis, the event axis, the condition axis and a PC axis.

15. (New) The multi-dimensional programming method according to claim 14, wherein said multi-dimensional horizontally written flowchart is at least one of a two-dimensional flowchart, a three-dimensional flowchart and a four-dimensional flowchart.

16. (New) The multi-dimensional programming method according to claim 14, wherein said program flowchart symbol information includes a start terminator and an end terminator.

17. (New) The multi-dimensional programming method according to claim 14, further comprising the steps of drafting a screen with the time axis, the data axis, the control axis, the CPU axis, the event axis, the condition axis and the PC axis as its coordinate information, and using a horizontal axis for the time axis and a vertical axis for the data axis, the control axis, the CPU axis, the event axis, the condition axis and the PC axis.

18. (New) The multi-dimensional programming method according to claim 14, further comprising the step of using said object editing unit to (i) make programming space displayable on a screen by means of three-dimensional basic coordinates which use a horizontal axis for the time axis and a vertical axis for at least the data axis and the control axis, and (ii) perform editing of said screen according to an input command signal.

19. (New) The multi-dimensional programming method according to claim 18, further comprising the step of using said object editing unit to enable dimensional switching to take a cross section of said programming space to reveal an inside portion of a program.

20. (New) The multi-dimensional programming method according to claim 14, further comprising the step of using said object editing unit to make flat surfaces of draftable programming spaces into a group and to assign tabs to said flat surfaces in a screen construction in which the vertical axis represents the data axis, the control axis, the CPU axis, the event axis, the condition axis and the PC axis.

21. (New) The multi-dimensional programming method according to claim 14, wherein said object editing unit includes a function for at least one of shrinking and restoring said coordinate information by units of rows and columns.

22. (New) The multi-dimensional programming method according to claim 14, wherein said object editing unit includes a function for burying a given coordinates axis into another coordinates axis centered around the time axis throughout a programming space.

23. (New) The multi-dimensional programming method according to claim 14, wherein said saving unit contains information associated with a horizontal slit having one line of cell objects, and information associated with a flat surface object corresponding to said horizontal slit.